

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	August 1, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	185.22	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	185.19	400kV THP - Siliguri Line - II	357.87	+	
		Unit- III	184.56	400kV THP - Siliguri Line- IV	340.89	+	
		Unit- IV	185.20	400kV THP - Malbase Line - III	404.21	+	
		Unit- V	185.20	400kV Malbase - Siliguri Line	321.52	+	
		Unit- VI	186.40	-	-	-	
		Total	1,111.77	Auxiliary Consumption & Transformation Losses at Gen. end	0.792%		
2	720MW MHP	Unit-I	197.87	400kV MHP - Jigmeling Line - I	294.29	+	Unit-III under Restoration . 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line II(Interim) on standby.
		Unit-II	197.75	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.78	+	
		Unit-IV	197.73	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-28.80	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	154.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	227.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	227.90	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	29.90	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.90	+	
		-	-	220kV Tsirang - Jigmeling Line	91.90	+	
-	-	132kV Gelephu - Salakati Line	20.85	+			
Total	593.35	Auxiliary Consumption & Transformation Losses at Gen. end	0.553%				
3	336MW CHP	Unit- I	92.10	220kV CHP - Birpara Line- I	99.16	+	
		Unit- II	90.47	220kV CHP - Birpara Line- II	99.00	+	
		Unit- III	92.35	220kV CHP - Malbase Line- III	138.00	+	
		Unit- IV	92.16	220kV CHP - Semtokha Line- IV	12.00	+	
		-	-	220kV Malbase - Birpara Line	54.25	+	
		-	-	66kV CHP - Chumdo Line	9.03	+	
		-	-	66kV CHP - Gedu Line	6.00	+	
		-	-	3x3MVA, 66/11kV TFR	1.30	+	
		Total	367.08	Auxiliary Consumption & Transformation Losses at Gen. end	0.706%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	50.30	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	26.50	+	
		Total	24.50	220kV BHP - Tsirang Line	-11.63	-	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	3.09	+	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Gen. end	0.211%		
6	126MW DHP	Unit-I	55.44	220kV DHP - Tsirang Line	106.99	+	220kV DHP_Dagapela Line on standby.
		Unit-II	52.04	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.90	+	
		-	-	5MVA, 220/33kV TFR	0.46	+	
		Total	107.48	Auxiliary Consumption & Transformation Losses at Gen. end	0.028%		
7	60MW KHP	Unit- I	16.59	132kV KHP - Nangkhon Line	36.79	+	
		Unit-II	16.32	132kV KHP - Kilikhar Line	27.85	+	
		Unit- III	16.28	5MVA, 132/11kV TFR	0.90	+	
		Unit- IV	16.51	132kV Motanga - Rangia Line	48.35	+	
		Total	65.70	Auxiliary Consumption & Transformation Losses at Gen. end	0.244%		

Note: Generation-Load Summary (MW) for August 01, 2021 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW, %)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	1,652.53	287.94	278.28	1,272.69	9.66
2	Eastern Grid	659.05	71.95	68.51	679.00	3.44
Total		2,311.58	359.89	346.79	1,951.69	13.10

Note: Generation-Load Summary for August 01, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,678.92	224.22	206.12	1,352.70	18.10
2	Eastern Grid	659.79	59.92	55.21	701.87	4.71
Total		2,338.71	284.14	261.33	2,054.57	22.81

NOTE-BHP & MHPA data collected from site

- The Instantaneous load balance is calculated as (Total generation - (Total export-Import) - Total domestic load) do not tend towards zero. This could be due to the following reasons:
 - Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 9:00hrs) due to many meter to be read manually.
 - The clocks of all the locations are not synchronized.
- This report is generated to give an idea of the generation & load flow for the system at a particular instant.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	August 2, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	184.42	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	185.28	400kV THP - Siliguri Line - II	365.58	+	
		Unit- III	185.44	400kV THP - Siliguri Line- IV	350.31	+	
		Unit- IV	184.46	400kV THP - Malbase Line - III	390.69	+	
		Unit- V	185.90	400kV Malbase - Siliguri Line	332.36	+	
		Unit- VI	186.13	-	-	-	
		Total	1,111.63	Auxiliary Consumption & Transformation Losses at Generator end	0.454%		
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Line - I	294.02	+	Unit-III under Restoration . 400kV MHP-JLG Line II & IV on standby.132kV MHP_Yurmoo line I & II not in service.400kV JLG_ALI Line II(Interim) on standby.
		Unit-II	197.26	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.75	+	
		Unit-IV	197.85	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-37.20	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	154.70	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	229.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	229.50	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.00	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	30.10	+	
		-	-	220kV Tsirang - Jigmeling Line	98.80	+	
-	-	132kV Gelephu - Salakati Line	9.25	+			
Total	592.96	Auxiliary Consumption & Transformation Losses at Generator end	0.538%				
3	336MW CHP	Unit- I	92.10	220kV CHP - Birpara Line- I	98.21	+	
		Unit- II	90.47	220kV CHP - Birpara Line- II	97.95	+	
		Unit- III	92.35	220kV CHP - Malbase Line- III	153.19	+	
		Unit- IV	92.16	220kV CHP - Semtokha Line- IV	4.17	+	
		-	-	220kV Malbase - Birpara Line	42.07	+	
		-	-	66kV CHP - Chumdo Line	5.40	+	
		-	-	66kV CHP - Gedu Line	5.74	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
		Total	367.08	Auxiliary Consumption & Transformation Losses at Generator end	0.469%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	47.70	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	25.20	+	
		Total	24.50	220kV BHP - Tsirang Line	-7.70	-	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	1.63	+	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.166%		
6	126MW DHP	Unit-I	55.45	220kV DHP - Tsirang Line	109.90	+	220kV DHP_Dagapela Line on standby.
		Unit-II	55.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.30	+	
		-	-	5MVA, 220/33kV TFR	0.40	+	
		Total	110.48	Auxiliary Consumption & Transformation Losses at Generator end	0.163%		
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Line	-8.45	-	KHP total shutdown for log flushing at Dam.
		Unit-II	0.00	132kV KHP - Kilikhar Line	8.05	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	6.39	+	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.000%		

Note: Generation-Load Summary (MW) for August 02, 2021 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	1,655.39	270.11	264.35	1,286.48	5.76
2	Eastern Grid	592.96	62.42	59.13	629.34	3.29
	Total	2,248.35	332.53	323.48	1,915.82	9.05

Note: Generation-Load Summary for August 02, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,679.37	237.65	219.54	1,339.72	18.11
2	Eastern Grid	847.94	65.57	62.14	884.37	3.43
	Total	2,527.31	303.22	281.68	2,224.09	21.54

NOTE-BHP and MHPA data collected from site

- The Instantaneous load balance is calculated as (Total generation - (Total export-Import) - Total domestic load) do not tend towards zero. This could be due to the following reasons:
 - Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 9:00hrs) due to many meter to be read manually.
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